TELES iGATE FCT
User’s Manual

TELES
Communication Systems

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Certification, Version Information, and Disclaimer

iGATE FCT carries CE Certification.

This manual is applicable to TELES iGATE FCT with software versions 0218 or higher. These apply to units with part number Q11-111093 (900/1800MHz) and Q11-111083 (850/1900MHz) with version numbers: B or higher. The part number and version number are marked on a sticker located at the bottom or the side of the unit (see section 1.3 – product identification). Other versions may differ slightly in some aspects.

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Chapter 1

Introduction

This section includes:

- "Overview" on page 2
- "Product Components & ID" on page 2
- "Contents of Package" on page 3
- "Safety Precautions" on page 3

Overview

The iGATE FCT gateway enables direct connection of an organization's internal telephony system to a commercial cellular network via an existing Private Automatic Branch Exchange (PABX) system.

The iGATE FCT interfaces with a regular two-wire analogue line interface and a GSM cellular network to create a cellular gateway. iGATE FCT operates via dual band GSM cellular networks (900/1800MHz). A special version operates at 900/1900MHz.

When the PABX supports Least Cost Routing (LCR), use of the iGATE FCT is transparent. The PABX recognizes iGATE FCT as a trunk interface and the routing is done in the PABX itself. In a PABX that does not support LCR, the user must select the proper trunk for the call.

The iGATE FCT can be used with a plain analog telephone. In this case, when the hand-set is lifted, the iGATE FCT sends a dial tone. This configuration can replace a fixed line telephone.

The iGATE FCT can be used to send and receive SMS, fax and data transmissions. These features are optional. Contact Technical Support for further information.

Product Components & ID

Figure # 1 illustrates the main components of the iGATE FCT.

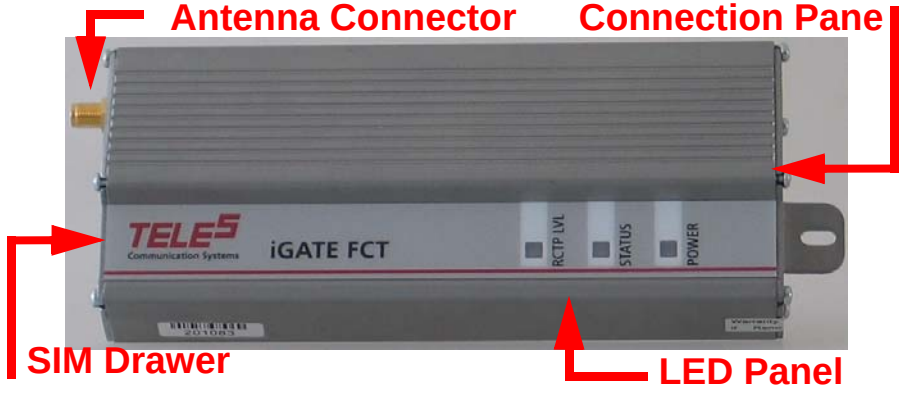


Figure 1: iGATE FCT Components

Product information is listed on the sticker on the bottom of the iGATE FCT.

Contents of Package

The iGATE FCT is shipped with the following components:

- iGATE FCT unit
- One antenna with a 3-meter cable
- Power cable (AC adaptor with rated output 9VDC, 1A)
- Three screws
- This user manual

The following items may be supplied on a separate order:

- Data cable for Fax and SMS
- An antenna with a 15-meter cable

Safety Precautions

To avoid injury and prevent equipment damage, observe the following safety precautions:

- Do not ship equipment unless it is properly packed in its original wrapping and shipping containers.
- Connect the power cable first and then the analog lines.
- When disconnecting the equipment, disconnect the analog lines first, then the power cable, and only then the ground connection of the rear panel.
- Do not connect the iGATE FCT to any power source other than the nominal source indicated on the front power panel.
- Make sure that the equipment top, bottom, and sides are not blocked to air movement.

Getting Started

This section includes:

- "Installing the Unit" on page 5
- "Initial Start-up and LEDs" on page 7
- "Testing the Installation" on page 8
- "Instructions for Users" on page 9

Installing the Unit

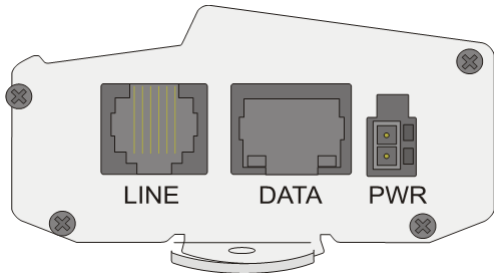
To install the iGATE FCT:

1. Select a location for the iGATE FCT. The location must meet the following criteria:
   - indoors
   - near a power socket
   - near a proper location for the antenna
2. Drill holes in the wall matching the wall mounting brackets of the iGATE FCT.
3. Screw the unit onto the wall.

   The unit must be placed in the orientation shown to the right, with the antenna socket up and the connection panel down.

4. Connect the antenna to the antenna connector located on top of the unit.
5. Ensure that a separate metal plate is available for each unit being installed. Each antenna should be placed on a metal plate. If metals plate are not available, complete the installation and add the metal plates later. The antenna base is magnetic, so an iron plate is preferred.
6. Select a location for the antenna. The location must meet the following criteria:
   - at least one meter away from the unit
   - with room for the metal plate
   - with room for the antenna to stand in an upright position
   - if installing more than one unit, each antenna should be on a separate plate with a minimum of 30 cm between each antenna.
7. Select a SIM card. The SIM card should meet the following criteria:
   - It is easier to use a SIM card without a PIN code.
   - If using a SIM card with a PIN code, we recommend first resetting the PIN code to #1234. (To program a SIM card, place it in a mobile phone and follow the phone's menu.) Then, either use the default PIN code or change the PIN code using the unit's DTMF programming process.
   - The SIM card should not support call waiting or voice mail. If these features are needed, use a mobile phone to define the message center for SMS transmissions.
8. Open the SIM drawer by inserting a dull, thin object into the button.
9. Place the SIM card in the tray. Ensure that the SIM card's contacts face the back of the tray.

10. Close the SIM card tray.
11. Connect the routed trunk port of the PABX (FXO) to the LINE port (FXS) of the iGATE FCT.



Note: *Ensure that the PABX's routed trunk port is a trunk interface that was pre-programmed to deliver cellular calls.*

Figure # 1 illustrates the pin layout of the RJ-11 connector. Table 1 details its pin-to-wire layout.

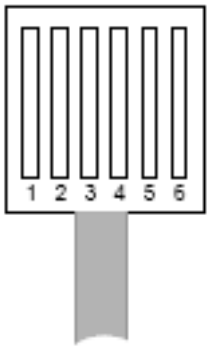


Figure 2: RJ-11 Line Connector Pin Layout

Table 1: RJ-11 Connector Pin Layout

PIN #	FUNCTION
1	Reserved
2	Tip
3	Tip
4	Ring
5	Ring
6	Reserved

Warning: *Do not use the reserved pins.*

Note: *The line can use either pins 3 and 4 or pins 2 and 5.*

12. Ensure that the PABX is properly configured. For details regarding the programming of the PABX, refer to the PABX's documentation or contact its Technical Support staff.

    Proper configuration includes:

    a. Set the trunk dialing method to standard DTMF (dual tone multi frequency). Pulse dialing is not supported.

    b. Create a new trunk group for all trunks connected to iGATE FCT devices and serving the same

cellular network. You may create several groups, serving several networks.

c. Determine if the PABX does or does not support Least Cost Routing (LCR).

- On PABX's supporting LCR, set the PABX routing tables to route the calls to the trunk groups. This is done by selecting the cellular prefixes to direct the routing. Calls that should not be made on the iGATE FCT can be blocked by using the Toll Restriction feature (see p. 19). The PABX will automatically route calls to the iGATE FCT.
- On PABX's that do not support LCR, ensure users know how to select the right trunk for the cellular calls (see "Instructions for Users" on page 9). After making the selection, users will hear a second dial tone, this one emitted by the iGATE FCT.

13. Connect the power cable.
14. Continue with the next section, entitled "Initial Start-up and LEDs".

Initial Start-up and LEDs

After the power cable is attached, the POWER LED should be illuminated. If it is not, ensure that the cable is properly connected to the unit and to the AC mains.

During the first seconds, the STATUS LED blinks. This indicates that the unit is initializing. Once the SIM card is registered and operational, the STATUS LED stops blinking. In certain cases, the LED may continue to blink. This is normal and reasons appear later in this document.

Verify that the RCPT LVL LED is green. This indicates a high reception level. (Reception levels are described in Table 2.) To improve the reception level, move the antennas to a different location with a better reception and/or place the antennas on a metal plate no smaller than 30 x 30cm. If the reception level is still not satisfactory, contact Technical Support.

Table 2: Reception Level Indications

RCPT LED	Reception Level	
Green	High reception	-75dBm to - 51dBm
Orange	Medium reception	-87dBm to -77dBm
Red	Low reception	-101dBm to -89dBm
Off	Very low reception or no reception at all	-113dBm to -103dBm

Testing the Installation

After installation and power up, perform the following tests. These tests verify that the unit is operational.

Checking Outgoing Calls

1. Disconnect the PABX cable from the LINE connector and, in its place, connect an analog telephone.
2. Pick up the hand-set. A normal dial tone should be audible. If there is no dial tone, see "Troubleshooting" on page 26.
3. Dial out to a known cellular telephone number. The ring-back tone should be heard.
   - If there is no ring-back tone, make sure that the number dialed is a valid number.
   - If there is a ring-back tone but no connection, try dialing another number.
4. When the called party answers, ensure that there is a clear bi-directional voice path and the STATUS LED is red.

Note: *Ensure that the dialed number does not conflict with the toll restriction rules, if activated.*

Checking Incoming Calls

1. Using a second phone, dial the phone number of the SIM card inserted in the iGATE FCT.
2. Upon hearing the ring, pick up the hand-set of the analog telephone (connected at the beginning of the first test).
3. Ensure that there is a clear bi-directional voice path and the STATUS LED is red.

   If there is no response from the channel, ensure that the dialed number is the correct number for the SIM card.

Note: *To verify a SIM card number: remove the SIM card from the iGATE FCT and insert it in a cellular phone. Dial out to another phone with a display or use the incoming number identification (CLIP) feature of the cellular phone.*

   If the number is correct and incoming calls are still not received, contact Technical Support.

Once the channel is working properly, restore the connections to the PABX. If the unit does not function properly, contact Technical Support.

Instructions for Users

We recommend distributing the following instructions to all iGATE FCT users.

- Do not wait more than 3 seconds between the digits of the dialed number.
- For PABX's without LCR, the system administrator must explain how to select the proper gateway, that is, what prefix to dial.
- If Toll Restriction is active in a PABX without LCR, some destinations will not be reachable because the call will be too expensive. Use the proper prefix.
- If Call Duration Limit is active, calls longer than the time limit will be cut.
- The iGATE FCT collects the dialed digits and places the call when one of the following occur:
  - the # key is pressed
  - the Inter-digit timeout period expires. See "Interdigit Timeout" on page 15. The default timeout is 3 seconds.
  - if Immediate Dialing is enabled, when the defined number of digits are dialed. See "Immediate Dialing" on page 15.

Chapter 3

Programming

This section includes:

- "How to Program" on page 11
- "Programming Summary" on page 12
- "Features" on page 13
- "Factory Default Values" on page 20

How to Program

All programming is done using the keypad of a Dual Tone Multi-Frequency (DTMF) telephone, similar to the keypad pictured in this illustration.

To program the iGATE FCT:

1. Connect a DTMF telephone to the LINE connector.

Note: *Alternately, dial through the PABX to the iGATE FCT unit.*

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2. Dial the sequence **1343**#. The iGATE FCT will respond with 3 short beeps to confirm it. If the code was wrong you will hear the error tone, meaning that the command was not accepted (probably because you entered it wrong). During programming:
   - 3 short beeps indicate positive confirmation (confirmation tone).
   - 2 short beeps indicate rejection or inability to perform the command (rejection tone).
3. Enter parameters using the DTMF tones. We recommended that you check the function of every feature you program and write it down, as there is no simple way to know what was programmed into the channel. If in doubt - reprogram the channel.

   Note the following rules:
   - The commands are in effect immediately after you dial their codes.
   - Each parameter is saved in the unit's permanent memory. The parameters will not be "forgotten" in case of power failure.
   - Each feature has a default value that is set during production (Factory default).
   - If you made a lot of changes and want to start from fresh, or you want to delete all the programming changes made to the channel - use the "Restore Factory Default" feature.
4. Hang-up to leave the programming mode.

Programming Summary

Table 3: DTMF Programming Summary

Code	Function	Remarks
1343#	Enter programming mode	To exit programming mode, hang-up.
3210#	Update Immediate Dialling. The channel will start dialling immediately after receiving this number of digits	This is followed by the number of digits required for Immediate Dialling and then by #. Enter "0" to disable Immediate Dialing.
3211#	Update Interdigit Timeout	See "Interdigit Timeout" on page 15.
5351#	Erase Toll Restriction table	See "Toll Restriction" on page 19.
5470#	Restore Factory Default	See "Restore Factory Default" on page 18.
5580#	Change Rx/Tx audio gain	See "Audio Gain" on page 13.
6100#	Enable SIM PIN code feature	See "PIN Code Programming" on page 16.
6101#	Disable SIM PIN code	See "PIN Code Programming" on page 16.
6110#	Change SIM PIN code	See "PIN Code Programming" on page 16.
6122#	Clear Channel Lock	See "Clearing a Lock" on page 14.

Table 3: DTMF Programming Summary

6133#	Call Duration Limit	See "Call Duration Limit" on page 13.
6150#	Erase SMS mailbox	See "Erase SMS Inbox of the SIM card" on page 14.
8200#	Enable CLIR	See "Calling Line Identification Restriction (CLIR)" on page 14.
8201#	Disable CLIR	See "Calling Line Identification Restriction (CLIR)" on page 14.
8600#	Enable Comfort Tone	This activates a short beep that is played in place of silence.
8601#	Disable Comfort Tone	This deactivates the comfort tone.
8620#	Enable Module's Dial Tone	Creates a dial tone matching that heard in the United States
8621#	Disable Module's Dial Tone	Disables the US dial tone
9190#	Enable Toll Restriction	See "Toll Restriction" on page 19.
9193#	Disable Toll Restriction	See "Toll Restriction" on page 19.
9194#	Add entry to Toll Restriction table	See "Toll Restriction" on page 19.
9195#	Remove entry from Toll Restriction table	See "Toll Restriction" on page 19.

Features

This section lists the various iGATE FCT features, which can be programmed by the user. Section 4.10, has a concise summary of the programming details.

Audio Gain

Use this parameter to adjust the volume. The level can be changed in both directions.

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *5580*#. The unit enters the 'change Rx/Tx gain' mode and emits the confirmation tone.
3. Dial to a cellular phone and add the # sign to the end of the phone number. (The phone number must have at least 3 digits.) The unit emits the confirmation tone. Wait until the call is answered.
4. Dial either:
   - *70*# for Tx gain
   - *71*# for Rx gain

   The unit emits the confirmation tone.
5. Adjust the volume by pressing the keys on the key pad followed by the # sign.

Table 4: Audio Gain Commands

Key	Result
2#	Increase gain *
8#	Decrease gain *
6#	Apply the default settings
4#	Reapply the previous settings
* Upon reaching the end of the gain scale, the unit emits the 2-beep rejection tone.	

Note: *In some units, the 2 and 8 keys are interchanged.*

6. Dial 5# to save the changes.

Call Duration Limit

The duration of incoming and outgoing calls can be limited. If the call duration exceeds the limit, the call is stopped and the user hears an error tone. To continue the call, the user has to redial.

By default, this feature is disabled and call length is unlimited.

To enable Call Duration Limit:

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *6133*#. The unit emits the confirmation tone.
3. Dial the maximum allowed time—between 1 and 254 minutes. A number between 254 and 999 will be accepted as 254. A number over 999 will be rejected.

To disable this feature, dial *6133*#0#.

Calling Line Identification Restriction (CLIR)

This parameter determines whether or not the iGATE FCT sends its SIM number to the called party.

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial either:
   - *8200*#. This allows the presentation of the SIM number to the called party.
   - *8201*#. This hides the SIM number from the called party.

   The unit emits the confirmation tone.

Clearing a Lock

Lock occurs after an unsuccessful attempt to change the PIN code. The unit will not perform any command relevant to a PIN code change until the Lock is cleared.

To clear the lock:

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *6122*#. The unit emits the confirmation tone and clears the lock.

Alternately, clear the lock by inserting a SIM card that does not request a PIN code. The unit notes that the SIM card does not require a PIN code and, consequently, clears the lock.

WARNING! *SIM cards lock after 3 failed tries. If using the alternate method to clear the lock, do not reinsert the first SIM card. Once the SIM card locks, it can only be unlocked with the PUK number.*

Erase SMS Inbox of the SIM card

Use this command to erase all messages stored in the SMS inbox of the SIM.

This feature is important when using SMS commands to remotely control the unit. The inbox of the SIM usually

stores no more than 20 messages. When the inbox is full, the unit cannot receive SMS messages and, as a consequence, remote control of the unit is disabled.

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *6150*#. The unit erases all stored messages and emits the confirmation tone.

Note: *The confirmation tone can be delayed up to 30 seconds, depending on current inbox volume.*

Immediate Dialing

Use this parameter to define how many digits have to be dialed before the iGATE FCT automatically places the call. This feature is especially useful if the unit is installed in a network where all the cellular phones have the same number of digits. Setting the Immediate Dialing length to that number of digits avoids the delay after the last digit.

Note: *When the number of digits is set to the network standard—for example, 9—shorter numbers are sent to the cellular network after the preset delay or after pressing the # sign.*

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1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *3210*#. The unit emits the confirmation tone.
3. Dial the number length—between 2 and 20 digits—followed by the # sign. For example, if you dial 10#, the iGATE FCT will place the call after 10 digits have been dialed.

Note: *To disable this feature, enter 0#.*

Interdigit Timeout

The iGATE FCT collects the dialed digits and places the call when the Inter-digit timeout period expires. The default timeout is 3 seconds. Use this parameter to change the default.

Note: *If the "Immediate Dialing" feature is not activated, the actual call initiation will also be delayed. To overcome this, activate the "Immediate Dialing" feature or press the # key after the final digit.*

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1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *3211*#. The unit emits the confirmation tone.
3. Dial the timeout length—up to 9 seconds—followed by the # sign. For example, if you dial 5# the timeout between dialed digits is set to 5 seconds.

Network Lock

Network Lock prevents the use of an unauthorized SIM card in the iGATE FCT. Once Network Lock is enabled, if an unauthorized SIM card is used, the iGATE FCT will not process either incoming or outgoing calls. Instead, it will generate an error tone on outgoing calls and will reject incoming calls.

Network Lock feature may be either disabled or enabled when you receive the unit. To change the setting, call Technical Support.

PIN Code Programming

Certain countries require that every SIM card be assigned a PIN code. The purpose of this requirement is to protect the SIM card against unauthorized use.

Overview

To use a PIN-code protected SIM-card, activate it and insert it into the iGATE FCT. Every time the unit powers up, it delivers the stored PIN code to the SIM card. If the code matches, the unit functions normally. If the code is wrong, the unit locks itself, ceases functioning, and the STATUS LED blinks. See "Clearing a Lock" on page 14.

Note: *The unit locks in order to prevent the SIM card from locking. SIM cards lock after 3 failed tries. Once the SIM card locks, it can only be unlocked with the PUK number.*

The PIN code protection can be used in several ways:

- PIN Code protection can be disabled. Then, use any SIM card programmed to function without a PIN code.
- Use the default PIN code of 1234. The unit is preprogrammed with this code. Use a SIM card programmed to require the default code 1234.
- Use a custom PIN code. Use a SIM card with a known PIN code and to program the code into the unit.

Enabling Protection When the PIN Code is Known

If the SIM card's existing PIN code is ***known***, there are two possibilities:

1. Insert the SIM card into the unit.
2. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.

- To enable the feature using the SIM card's existing PIN Code:

  a. Dial *6110*#. The unit emits the confirmation tone.

  b. Dial XXXX# — that is, the existing PIN code followed by the # sign. The unit emits the confirmation tone.

This enables the PIN code request feature and enters the existing PIN code into the unit. The PIN code is stored in the unit and is transferred to the SIM card each time the unit is initiated.

- To enable the feature using a PIN code different from the existing PIN Code:
  a. Dial *6100*#. The unit emits the confirmation tone.
  b. Dial XXXX*, that is, the existing PIN code followed by the * sign. The unit emits the single tone.
  c. Dial YYYY*, that is, the new PIN code followed by the * sign. The unit emits the single tone.
  d. Dial YYYY#. The unit emits the confirmation tone, enables the new PIN code, and stores it in place of the existing PIN code.

Note: *If this operation failed, the PIN code XXXX was not the one on the SIM card. See "Troubleshooting" below.*

Enabling Protection if the PIN Code is not Known

If you do not know the current PIN code of the unit:

1. Reset the unit to the factory default setting. (See "Restore Factory Default" on page 18.)
2. Set the SIM card's PIN to 1234. (To program a SIM card, place it in a mobile phone and follow the phone's menu.)
3. Continue with "Enabling Protection When the PIN Code is Known" on page 16.

Disabling PIN Code Protection

To disable the feature:

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *6101*#. The unit emits the confirmation tone.
3. Dial XXXX#. The unit emits the confirmation tone and disables the PIN code request feature on the SIM. The PIN code of the SIM card (XXXX) and the one stored in the unit remain unchanged.

Troubleshooting

If the Stat LED is blinking rapidly, there is an error with the PIN code entry. There are several ways to resolve this:

- Disable the SIM card's PIN Code Protection.
- Change the SIM card's code to match the code of the unit. (To program a SIM card, place it in a mobile phone and follow the phone's menu.)

After the inserting the SIM card into the iGATE FCT, clear the lock. See "Clearing a Lock" on page 14.

Restore Factory Default

Use this feature to restore the parameters the unit had when it was shipped from the factory.

Note: *The PIN code of the channel will be restored to its default value. The PIN code of the SIM card will not be changed. It is recommended to change the PIN code of the SIM card to 1234 before this operation or else the channel will start with "wrong PIN code" status.*

---

1. Ensure that you know the PIN code of the SIM card and the unit.
2. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
3. Dial *5470*#. The unit restores the factory default settings and emits the confirmation tone.
4. Disconnect the unit from the power supply and reconnect it.

Set Pulse Drop Signaling Method

If the PABX trunk connected to the unit supports Pulse Drop, use this command to set the unit to Pulse Drop signalling mode.

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *7620*#. The unit emits the confirmation tone.

Set Pulse Drop Width

If Pulse Drop signalling method is used, the width of the pulse can be controlled using this command. In general—in order to be recognized by the PABX—the pulse width must be higher than the parameter used by the PABX. For example, if the PABX trunk is set to a pulse drop of 1 second then the unit should be set to 1.5 seconds.

By default, the pulse drop width value is 1.5 seconds.

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *7630*#. The unit emits the confirmation tone.
3. Dial 1 or 2 digits followed by the # sign. The unit sets the pulse width and emits the confirmation tone.

The pulse width is measured in units of 100 milliseconds and can be between 100–9900 ms. For example, to set the pulse drop width to 2 seconds dial 20#.

Set Reverse Polarity Signaling Method

If the PABX trunk connected to the unit supports Reverse Polarity, use this command to set the unit to Reverse Polarity signalling mode.

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *7610*#. The unit emits the confirmation tone.

Toll Restriction

When Toll Restriction is enabled, the unit only calls numbers that start with prefixes that are programmed in the white list. Attempts to call numbers starting with other prefixes fail and the caller hears an error tone.

Note: *Numbers containing 4 digits or less, including those starting with the * sign, are never blocked. This ensures that emergency and special service calls are placed.*

The list of allowed prefixes can include up to 10 entries. The minimum length of a prefix to enter the table is two digits and the maximum number is 4 digits.

There is no way to read the prefixes stored in the table. If you are in doubt about a specific prefix - reenter it or delete it.

1. Dial ** 1343**#. The unit enters the programming mode and emits the confirmation tone.
2. Dial *9194*#. The unit emits the confirmation tone.
3. To add entries to the white list, dial one or more prefix separated by the # sign. You must add at least one entry before enabling the feature.
4. Dial *9190*#. The unit emits the confirmation tone and enables the Toll Restriction feature.

   For example, to limit the unit to prefixes 061, 063 and 064:

   dial *9194*#, dial 061#, dial 063#, dial 064#, dial *9190*#.

   After each # sign, the unit emits the confirmation tone.

Note: *In case of an error, the error tone is heard. Replace the handset and start the procedure again.*

Other DTMF commands include:

Table 5: Toll Restriction Commands

Command	Result
9193#	Disables the Toll Restriction feature. This does not erase the entries in the table.
9195# followed by a prefix followed by the # sign	This deletes the dialed prefix. If the prefix was erased, the unit emits the confirmation tone. If the prefix was not in the table, the unit emits the rejection tone. When the last prefix is erased, the unit disables the Toll Restriction feature.
5351#	Erase all the Toll Restriction entries. *
* The prefix numbers do not include the prefix digit used to exit the PABX environment to the public network (usually "9" or "0").	

Factory Default Values

- Toll restriction is disabled
- Network lock default depends on the version
- Rx gain - -8db, Tx gain - +36db
- CLIR enabled
- SIM PIN code request disabled. Default PIN code is 1234
- Immediate dialing length is disabled (0)
- Call Duration is unlimited.
- The pulse drop width value is 1.5 seconds.

SMS

This section includes:

- "SMS Commands Overview" on page 22
- "GET Command Table" on page 22
- "SET Command Table" on page 23

SMS Commands Overview

The iGATE FCT may be controlled remotely using SMS commands. The SMS message must match the structure described in tables Table 6 and Table 7. Both lowercase and uppercase entries are acceptable.

Replies are returned to the originating phone number. Once received, the iGATE FCT analyzes the message and executes the command.

There are two types of commands:

GET command
GET commands request current information from the unit. GET commands are a combination of three letters as described in Table 6.

SET command
SET commands—defined in Table 7—apply programming changes to the unit. SET commands are a combination of three letters followed by the "=" sign and the corresponding programming feature.

Note: *The speed SMS messages are delivered is dependent upon the network. There may be a delay.*

GET Command Table

Table 6: GET Command Table

Command Syntax	Command Feature	Applicable Response
LIS	Gets the line's current state	LINE IS ONHOOK/OFF-HOOK
SME	Gets the IMEI number of the SIM	SIM IMEI No.: "Usually 20 digit number"
SMS	Gets the IMSI number of the SIM	SIM IMSI No.: "Usually 15 digit number"
MME	Gets the IMEI number of the cellular Module	MODULE IMEI No.: "Usually 15 digit number"
MSW	Gets the software version of the cellular module	Module SW Version: "As defined by the cellular module manufacturer"
RXL	Gets the reception level in DB	RX Level: (-51db – -113db) dBm, BER:(0-7)
SWV	Gets the software version of the unit	SW VER: Q111xxxxxx (Where xxxxxx states the software version)
TRS	Gets the Toll Restriction table	TR IS OFF/ON, xx,xx,xx,xx Stored (Where xx defines the TR prefix table)
VGR	Gets the Rx Audio gain	RECEIVE GAIN (+30 - +51) intervals of 3db

Table 6: GET Command Table

Command Syntax	Command Feature	Applicable Response
VGT	Gets the Tx Audio gain	TRANSMIT GAIN (+6 - -24) intervals of 2 db
CEL	Gets the current registered cell information	Main Cell is: "Response depends on the GSM Network"
SIG	Gets the signalling method	Line Signal is Reverse Polarity/Pulse Drop, XX

SET Command Table

Table 7: SET Command Table

Command Syntax	Command Feature	Applicable Response
SIG=P	Set Signalling method to Pulse Drop.	Line Signal is: Pulse Drop, XX (Where XX is the width of the pulse)
SIG=P,XX	Set Signalling type to Pulse Drop and the Length of the pulse. Where XX can be 1-99 (100 milliseconds to 9.9 seconds)	Line Signal is: Pulse Drop, XX (Where XX is the width of the pulse)
SIG=R	Set Signalling type to Reverse Polarity	Line Signal is: Reverse Polarity
EMB=1	Erase the SMS inbox of the SIM	Mailbox is Erased
RST=1	Reset the unit	Restart Was Done.

Chapter 5

Miscellaneous

This section includes:

- "Call Progress Tones" on page 25
- "LED Indications" on page 25
- "Troubleshooting" on page 26
- "Specifications" on page 27

Call Progress Tones

Type	ON cadence	OFF cadence	Remarks
Dial tone	Continuous		
Busy tone	0.5 Sec	0.5 Sec	
Error tone	0.2 Sec	0.2 Sec	
Distinctive tone	0.2 Sec	0.1 Sec	Incoming ring in off-hook, before dialling started
Confirmation tone (for programming)	0.4 Sec	0.1 Sec	3 beeps
Rejection tone (for programming)	0.4 Sec	0.1 Sec	2 beeps

LED Indications

RCPT LVL (Reception Level)	
Indicates the reception level of the iGATE FCT.	Green High reception. Orange Medium reception Red Low reception Off Very low, or no reception at all ***Note***: To indicate proper activity of the channel while idle, the LED turns off a few seconds every 15 seconds of operation. During a call, the indication is frozen at that which existed when the call started.

STATUS	
Indicates the channel operational status.	On The channel is handling a call. Blinking (0.2S on, 0.2S off) - During ringing Off The channel is idle. **Indications** Slow blinking (0.5S on, 0.5S off): The channel is initializing following power up. Fast blinking (0.1S on, 0.1S off): No SIM card or an error has occurred in the PIN code entry. The PIN code must be disabled or the default PIN code 1234 must be entered. Mostly on (0.5S on, 0.1S off) Toll Restriction is activated **Special Indications** Blinking (0.3S on, 0.3S off) During DTMF programming session Blinking (0.2S on, 1S off) During local PC session
POWER	
Indicates the status of the power connection.	On-the channel is powered on. Off-the channel is powered off.

Troubleshooting

No	Problem	Indications	Solution
1	Unit does not respond	None of the Pwr LEDs is on, no dial tone	- Reconnect the power cable, switch off and on the main switch, and check if the AC socket is live.
2	Unit does not respond	Stat LED does not stop blinking	- Reconnect the power supply
J	Unit does not respond	Stat LED blinks fast	- Replace the SIM with a good SIM that does not require PIN code - Insert a SIM of another network
4	Bad or no audio	Rcpt (Reception) LED red	- Wait a few minutes and try again - Move antenna to a better location - Replace antenna with another antenna
5	No dial tone	No dial tone	- Check telephony cable - Try using another phone
6	Dial tone does not stop	Dial tone continues after dialling first digit	- Use a different phone - Reset the unit (reconnect the power supply)
7	Can not connect to a destination	The channel responds with an error tone after dialling	- Verify that you have a valid SIM card - Check that the destination does not conflict with the toll restriction table - Disable toll restriction table - Try using a SIM without PIN
8	Can not connect to a destination	The network sends an error message	Check that the number dialled is not longer than specified by immediate dialling
9	Voice level is too low or too high		Reprogram the voice levels
10	Calls longer than a certain time are cut	Call is cut before going on hook	Check that call duration is not too short
	An attempt to change the PIN code fails	A rejection tone is heard	See "PIN Code Programming" on page 16.

Specifications

General Specifications	
Mains Supply Voltage	100-240 VAC, 50-60 Hz
Current Consumption	0.5 A max
Operating temperature	0 °C to 45 °C
Physical dimensions	1U 19" shelf
Standards	Full CE
Line Specifications (for each of the channels)	
Line loop current	40 mA max
Line supply voltage	- 48 VDC ± 10%
Line impedance	600 Ohm
Dial tone	400 Hz ± 1%
Ring generator	42 Vrms/25 Hz
Line signaling	DTMF
Line connector (2W TIP/RING)	RJ11-C (pin 2, 3- TIP, pin 4, 5- RING)
Data Port Specifications	
Interface port	RS232
Protocol	AT Command Compatible
GSM Channel Specifications	
Dual band GSM	900/1800Mhz or 850/1900MHz
Standards	Type Approval CE mark.

GSM module	WaveCOM Wismo 2D
Optional Features	
Fax	Requires a data connection between the iGATE FCT and a PC with Winfax version 10 and up.
SMS	Requires a data connection between the iGATE FCT and a PC running an SMS application that supports Wave-COM module.
Safety Standards	
N°QUAEMC_EN. 15967C	Conforms to the EMC requirements of: EN 301 489-1 V1.4.1: 2002; EN 301 489-7 V1 .2.1: 2002, R&TTE Directive 1999/5/EC and EMC Directive 89/336/ EEC Article 4.
N°QUAS AF_EN. 15967C	Conforms to the Safety requirements of: EN/IEC 60950-1:200 1and AS/NZ 60950.1:2003

* Specifications are subject to change without notice